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CHAPTER 3

POTENTIAL SURFACE ACTIVE PROPERTIES OF *NIGELLA SATIVA*

Siti Nurfajariah bt Said and Kausar bt Ahmad

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The potential surface active properties of Nigella sativa may arise from numerous fatty acids that can be isolated from the extract of black seeds. The extract of black seeds mostly composes of fixed oils (fatty acids) and volatile oils. The major fatty acids in black seeds are linoleic acid, followed by oleic and palmitic acids; the percentage compositions are described. The major volatile oils are thymoquinone and nigellone. The potential surface active properties of Nigella sativa can be exploited for emulsification.

3.1 Surfactants

Surfactant is an agent that is used to reduce the interfacial tension between two immiscible liquids as simple as water and oil. Presence of surfactants in products used daily enable us to clean dirty clothes, writing on a paper using a pen and having various kinds of pharmaceuticals or cosmetics. A surfactant has certain and specific properties that make it useful as emulsifier, dispersant, wetting or foaming agent. In the pharmaceutical field, surfactant is added in the drug formulation to enhance drug delivery and stabilize the drugs with specific function in emulsions. It has important roles in increasing solubility of the drugs, enhancing the release of drugs and transport, minimizing toxicity, slowing degradation and thus enhancing the effectiveness of the drugs.